

Fishing by two Furnariidae: Pacific Hornero *Furnarius [leucopus] cinnamomeus* and Surf Cinclodes *Cinclodes taczanowskii*

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Se reportan y describen las primeras observaciones de Furnariidae alimentándose de peces. Las dos especies observadas pescando fueron *Furnarius [leucopus] cinnamomeus* y *Cinclodes taczanowskii*. *F. [leucopus] cinnamomeus* fue observado en el bosque seco pescando desde el borde de pozas de agua de poca profundidad a *Lebiasina bimaculata*, un pez de aguas continentales. *Cinclodes taczanowskii* fue observado en la bahía de Pucusana, pescando en las rocas de zonas intermareales a *Tomicodon chilensis*, un pez que se adhiere a las rocas. Los comportamientos de ambas especies de aves serían ocasionales o aprendidos. Los datos sobre *F. [leucopus] cinnamomeus* son adicionalmente los primeros del género *Furnarius* alimentándose de vertebrados.

Furnariidae usually feed exclusively on arthropods, but also take other invertebrates such as molluscs, crustaceans and earthworms, and some vegetable material such as seeds^{2–4,6–10,12,13}. However, the feeding and foraging accounts by Skutch¹⁰ and a review by Remsen⁷ for the whole family, include, aside from the expected invertebrates, a large scope of food items from berries and drupes to frogs and lizards. The latter vertebrates are frequent food items for treehunters *Thripadectes*^{7,10}. Also, Surf Cinclodes *Cinclodes taczanowskii*—a sedentary Furnariidae that lives by the ocean—opportunistically includes small fish in its diet, some of them taken from regurgitates of Inca Terns *Larosterna inca*¹.

Species of *Cinclodes* eat mostly invertebrates, but also take seeds, carrion, molluscs, and even steal butter and cooked meat^{7,10,12,13}. Research on Seaside Cinclodes *C. nigrofumosus* in Chile, the sister species of Peruvian *C. taczanowskii*, showed that over 90% of its diet comprised crustaceans and molluscs, the remainder being insects⁹. On the other hand, *Furnarius* species have only been observed feeding on insects, their larvae, and earthworms^{7,10}.

Pacific Hornero *Furnarius [leucopus] cinnamomeus*

Pacific Hornero is a common and conspicuous species from west Ecuador to north-west Peru¹¹. Observations of fishing by the hornero were made at El Angolo dry forest, where there is a long dry period in April–November, and a short rainy season in December–March. The following observations were made in October 1994 at an altitude of 600 m around a large shallow pool beside a creek. In a five-day period, the pool was monitored for a total of 3h20m over three different days, all mid morning to 13h00.

At least two individuals—of seven Pacific Horneros around the pool—were observed by JB feeding on the fish *Lebiasina bimaculata* (Lebiasinidae). Eighteen fishing attempts were

observed, but only five were successful, including one fish that escaped after capture. Their strategy involved patrolling the margins of the pool pecking insects from cattle manure while watching fish that approached the sides or that tried to cross between a series of stepping stones in very shallow water (less than 1 cm deep). Two catches were made from the stepping stones, including the fish that subsequently escaped. The other three fish were caught beside the pool. They included a very small fish which was swallowed whole, a large one that was caught, pecked and carried away from the area, and two small ones taken first to the nearby land and then eaten. The fish that escaped was a very large one for the Pacific Hornero, apparently c.6–7 cm long.

No measures of food availability for Pacific Hornero, i.e. invertebrate abundance, at the site were made. However, there appeared to be abundant food given the numerous insects associated with cattle manure. Pacific Horneros were common and conspicuous in the El Angolo lowlands, but very few were observed fishing, suggesting that such behaviour was probably not enforced by food shortage. Pacific Hornero is considered less dependent on water than *F. [leucopus] leucopus*⁴, but was definitely taking advantage of the shallow waterholes during the dry season to expand or supplement its diet.

Surf Cinclodes *Cinclodes taczanowskii*

Surf Cinclodes is a common species restricted to rocky areas of the central and southern Peruvian coastline^{1,5,11}. Fishing observations were made along the rocky shoreline of Pucusana Bay, a coastal fishing resort 60 km south of Lima, in December 2003–February 2004, whilst conducting research on Marine Otter *Lontra felina*.

Surf Cinclodes was frequently observed by JV feeding on *Tomicodon chilensis* clingfishes (Gobiesocidae), which live adhered to inter-tidal rocks. This feeding behaviour was observed from

the shoreline and from a kayak. Fishing by the cinclodes occurred in almost all observation periods from the shoreline—three hours twice a day—and in almost all kayak trips around the bay. Clingfishes caught by the cinclodes measured 2 cm to c.6 cm (i.e. up to three times the bird's bill length). Fishes were captured at the waterline and carried to nearby rocks, sometimes away from the waves, and then ingested.

No measures of food availability for Surf Cinclodes, i.e. abundance of molluscs and crustaceans, were made at the study site. However, both groups appeared numerous on accessible rocks. *Cinclodes* species are strongly related to water^{2,10}, but the only feeding data including fish involved Surf Cinclodes that were observed eating Inca Tern regurgitates, although unidentified fish remains have been recorded as stomach contents¹. Other published data on feeding behaviour of this species and Seaside Cinclodes⁸ in Chile—with which *C. taczanowskii* forms a superspecies—only mentioned marine animals in general⁵, and molluscs and crustaceans^{6,9} as food items.

Discussion

The Furnariidae is rich in species associated with water-edge habitats, perhaps more so than any other family among the Passeriformes⁷. Thus, if any passerines might be expected to take fishes occasionally, species of Furnariidae would rank high in the list of candidates (J. V. Remsen pers. comm.). Fish-eating in Passeriformes has been documented for just a few species (e.g., *Pitangus* flycatchers and *Quiscalus* grackles), so our observations are distinctly unusual (J. V. Remsen pers. comm.).

Furnarius and *Cinclodes* species are not capable of swimming, and unable to catch fish on the water surface from the air, restricting their fishing strategy to the edge of waterbodies. Pacific Hornero may only fish in shallow waterholes, which only appear during dry seasons, and rivers that are probably best when they are shallow. Surf Cinclodes has a broader chance to fish in areas along the coastline where rocks with even surfaces—where clingfishes adhere—are present.

Published data on behaviour and feeding habits in *Furnarius* and *Cinclodes* species do not include fishing or feeding on live vertebrates^{1,3,4,6–10,12,13}. It is unlikely that such behaviour was overlooked by previous authors, as any fishing activity would be easily observed or discovered by examining stomach contents. We also assume that considerable observation time has accumulated on these species, mostly by birdwatchers. Moreover, previous data on feeding habits were based both on stomach contents^{1,6,9,12,13} and on direct observations^{1,2–4,8,10}.

Thus, the observations described above (which were also photographed) might illustrate either an occasional or a learnt behaviour specific to the populations concerned. Pacific Hornero fishing behaviour appears to be restricted to a few individuals. However, the entire Surf Cinclodes population at Pucusana Bay seems to indulge in such behaviour.

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Pacific Hornero *Fuarnarius [leucopus] cinnamomeus*, fishing, El Angolo dry forest, Peru, October 1994 (Javier Barrio)



Surf Cinclodes *Cinclodes taczanowskii*, fishing, Pucusana Bay, Peru (Juan Valqui)

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